

ALGEBRA I UNIT 3 TEST REVIEW

INEQUALITIES

NAME _____

MULTIPLE CHOICE.

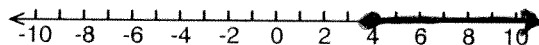
Translate.

- The cafeteria holds at most 450 people.
 - $p < 450$
 - $p \leq 450$
 - $p \geq 450$
 - $p > 450$
- To be an official school club a club must have at least 15 members.
 - $m \leq 15$
 - $m < 15$
 - $m \geq 15$
 - $m > 15$
- John must earn **between** \$100 and \$120 this week.
 - $100 < e < 120$
 - $100 > e > 120$
 - $100 \leq e \leq 120$
 - $100 < e < 120$
- The ice in the pond must be at least 32°F if we are to be able skate on it.
 - $T \leq 32$
 - $T > 32$
 - $T \geq 32$
 - $T < 32$
- There should be no more than 25 students in a math class.
 - $s \leq 25$
 - $s > 25$
 - $s \geq 25$
 - $s \leq 25$

- There were fewer than 1,000 fans at the concert.
 - $f < 1000$
 - $f \leq 1000$
 - $f > 1000$
 - $f \geq 1000$

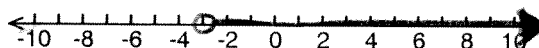
Graph the solution to each inequality.

7. $x \geq 4$



8.
$$\frac{-3x}{-3} < \frac{9}{-3}$$

 $x > -3$



- Write an inequality to represent the following situation: Four less than 3 times the sum of a number and 6 is at most 8.
 - $4 - 3x + 6 \geq 8$
 - $3(x + 6) - 4 \leq 8$
 - $3(x + 6) - 4 \leq 8$
 - $4 - 3(x + 6) > 8$

$$3(x + 6) - 4 \leq 8$$

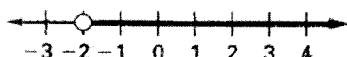
TRUE OR FALSE. SHOW ALL WORK.

Tell whether each inequality is true or false for the given value.

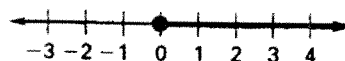
- 10a. $3x - 2 > 2x + 1$ $x = -2$ False
 $3(-2) - 2 > 2(-2) + 1$
 $-8 > -3$
- b. $2w + 7 \leq 17$ $w = 5$ True
 $2(5) + 7 \leq 17$
 $17 \leq 17$
- c. $\frac{p}{-5} > 4$ $p = -30$ True
 $\frac{-30}{-5} > 4$
 $6 > 4$

GIVE THE INEQUALITY GRAPHED ON EACH.

11a. $x > -2$ $\{x | x > -2\}$



b. $x \geq 0$ $\{x | x \geq 0\}$



GIVE THE SOLUTION SET TO EACH INEQUALITY.

12. $0.4b - 5 > 23$
 $+5 +5$
 $0.4b > 28$
 $\frac{0.4}{0.4} \frac{0.4}{0.4}$
 $\{b | b > 70\}$
13. $\frac{3t - 21}{4} \geq 11$ (4)
 $3t - 21 \geq 44$
 $+21 +21$
 $3t \geq 65$
 $\frac{3}{3} \frac{3}{3}$
 $t \geq \frac{65}{3}$
 $\{t | t \geq \frac{65}{3}\}$
14. $6 \leq 8 - 2m$
 $6 \leq 8 - 2m$
 $-8 -8$
 $-2 \leq -2m$
 $\frac{-2}{-2} \frac{-2}{-2}$
 $1 \geq m$
 $\{m | m \leq 1\}$
15. $-\frac{x}{4} + 5 > -16$
 $-5 -5$
 $(-4) -\frac{x}{4} \geq -21$ (-4)
 $\{x | x \leq 84\}$
16. $4(2x - 1) > -10(x - 5)$
 $8x - 4 > -10x + 5$
 $+10x +10x$
 $18x - 4 > 5$
 $+4 +4$
 $18x > 9$
 $\frac{18}{18} \frac{9}{18}$
 $x > \frac{1}{2}$
 $\{x | x > \frac{1}{2}\}$
17. $\frac{5}{6}p \leq -\frac{25}{9}$ (18)
 $\frac{15p}{15} \leq -\frac{50}{3}$
 $\{p | p \leq -\frac{10}{3}\}$

Write an inequality and solve it to answer each problem.

19. Three times a number subtracted from 10 is at least 6 more than the number.

$$\frac{10 - 3x}{+x} \geq \frac{6 - x}{+x}$$

$$\frac{10 - 2x}{-10} \geq \frac{6}{-10} \quad \{x | x \leq 2\}$$

20. You work for a computer tutoring service that charges \$18 for you to come to the customer's home and \$12 per hour to teach the customer how they can get the most out of their computer. If a customer has budgeted to spend \$60, how many hours are you able to tutor her?

$$\frac{18 + 12x}{-18} \leq \frac{60}{-18}$$

$$\frac{12x}{12} \leq \frac{42}{12}$$

You can tutor
 $3\frac{1}{2}$ hours